DOCUMENT RESUME

ED 268 707 EC 182 311

AUTHOR Zerrer, Peggy
TITLE Fetal Alcohol Syndrome.
PUB DATE Feb 86
NOTE 26p.
PUB TYPE Guides - Non-Classroom Use (055)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Alcoholism; *Clinical Diagnosis; *Disabilities; High Risk Persons; Intervention; Physiology; Pregnancy; *Prenatal Influences; *Prevention; Special Health Problems; Student Characteristics
IDENTIFIERS *Fetal Alcohol Syndrome

ABSTRACT

The paper reviews Fetal Alcohol Syndrome (FAS), a series of effects seen in children whose mothers drink alcohol to excess during pregnancy. The identification of FAS and its recognition as a major health problem in need of prevention are traced. Characteristics of children with FAS are described and resultant growth retardation, abnormal physical development, central nervous system dysfunction, and fetal and perinatal death are discussed. The research on effects of different levels of alcohol consumption during pregnancy is cited and the physiological and metabolic effects on the fetus are explained. Emotional and psychological defects in children of alcoholic fathers are also considered. A case study illustrates the importance of early intervention. The need for federal and state policy initiatives in prevention and early diagnosis is stressed. A list of service and information resources on FAS concludes the paper. (CL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ED268707

FETAL ALCOHOL SYNDROME

PEGGY ZERRER
509 STURBRIDGE COURT
FLEMINGTON, NEW JERSEY 08822
FEBRUARY 1986

TEACHER, WARREN MIDDLE SCHOOL, WARREN, NEW JERSEY 07060
GRADUATE STUDIES, SPECIAL EDUCATION, TRENTON STATE COLLEGE, TRENTON, N.J.

EC182311

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Peggy Zerrer
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Fetal Alcohol Syndrome, commonly known as FAS, refers to a series of effects seen in children of women who chronically drink alcohol to excess during, and possibly prior to pregnancy (Ouellette 1983).

Intrauterine exposure to alcohol may be the number one fetal teratogen in this country and the most common cause of mental retardation (Stephens 1981). Ethanol (alcohol) has been identified as a teratogen in both humans and animals (Streissguth 1978). A teratogen is an agent that causes malformation in a developing embryo (Batshaw and Perret 1981).

In 1973 Fetal Alcohol Syndrome was identified as a distinct clinical entity arising from maternal alcohol consumption during pregnancy. Today it is recognized as a major health problem in need of a program of prevention (Stephens 1981). From biblical times through the late nineteenth century alcohol was widely thought to have a detrimental effect on fetal development (Blume 1981). Increased frequency of stillbirth and perinatal death in connection with maternal drinking were reported as early as 1899 (Little 1983).

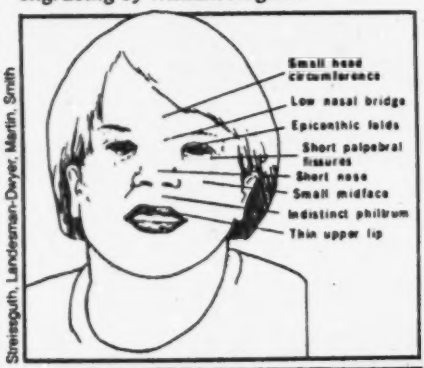
The potential danger of maternal alcohol consumption on offspring was recognized in ancient Greece. Both Carthage and Sparta had laws prohibiting the use of alcohol by newly married couples to prevent conception during intoxication (Gold 1984).

Burton in 1621, citing Aristotle's "Problemata", stated that "Foolish drunken or hair-brained women for the most part bring forth children like unto themselves, morose and languid." In England in the 1720's the government lifted traditional restrictions on the distillation of grain for alcoholic beverages. The "Gin Epidemic" followed and cheap gin flooded the countryside. (Picture on next page.) In 1726 a report to Parliament called for the control of the distilling trade citing parental drinking as a cause of weak, feeble and distempered children (Gold 1984).

In a 1751 report to Parliament, The College of Physicians attributed a drop in the birth rate and the increase in sickly and inviable infants to maternal alcoholism (Gold 1984). These early studies were largely lost from sight until 1968 when French research

BEST COPY AVAILABLE

(Below) Fetal alcohol syndrome produces abnormal facial features. Gin Row *(detail, bottom) an 18th century engraving by William Hogarth.*



Streissguth, Landesman-Dwyer, Martin, Smith

Hollenwald Collection/National Gallery of Art

workers described mental retardation and physical deformities among children born to alcoholic mothers (Edwards 1983).

Standard teaching in the 1940's and 1950's attributed the unfavorable outcome of pregnancy, often noted in frankly alcoholic women, to such factors as faulty nutrition and hygiene (Blume 1981). The plight of the offspring of alcoholics began to receive the attention of researchers in the early 1970's. Old concepts regarding maternal alcohol ingestion were re-examined with the earliest mention of FAS reported in 1971 (Gold 1984). It was in 1968 in France and 1972 in the United States that systematic descriptions of birth defects in offspring of alcoholic women appeared in the scientific literature. The clinical picture was named Fetal Alcohol Syndrome by Dr. Jones and colleagues (Blume 1981).

Minimum criteria for the diagnosis of FAS are:

1-Postnatal and prenatal growth retardation.
Central nervous system involvement, with neurologic abnormality, developmental delay and intellectual impairment.

2-Facial dysmorphology.

3-Microcephaly (small head).

4-Microphthalmia (small eyes).

5-Poorly developed philtrum (the distance from the base of the nose to the upper lip). (Ouellette 1983).

Infants born with FAS have short upturned noses, thinned upper lip, drooping eyelids and usually a one-sided squint. Frequently the baby's body is very hairy, especially the face. The upper jaw may be underdeveloped on one side. A funnel chest and a cleft palate may occur(Lemeshow 1982).

According to Stephens (1981) a distinctive flattened facial appearance is identifiable at birth. Other visible characteristics of FAS infants include possible joint abnormalities which prevent full extension of the elbows, altered palmer crease, permanent flexion of the fingers of both hands and joint abnormalities such as bilateral hip dislocations(Lemeshow 1982).

Nation-wide Fetal Alcohol Syndrome is thought to be the third most frequent cause of mental retardation, due to birth defects following in incidence Down Syndrome and Spina bifida. FAS consists of

deficiencies in growth, in central nervous system development and in formation of the midportion of the face. The growth retardation begins in utero and persists postnatally in most cases. There may be mild to moderate mental retardation due to damage to the central nervous system, poor coordination, irritability in infancy and hyperactivity in childhood (Blume 1981). Associated also are a range of defects in other organ systems including the heart, joints, kidneys and genitalia (Little 1983).

Full blown classical cases of FAS are rare. It is more appropiate to refer to Fetal Alcohol Effects, FAE, because it appears that the chances of birth defects due to maternal alcohol consumption range upon a continuum with lesser amounts of alcohol intake leading to lesser birth defects and adverse outcomes (Streissguth 1978). Ouellette (1983) defined FAE: "Fetal Alcohol Effects, FAE, refers to any abnormalities seen in children as a result of alcohol use by women during pregnancy."

There are four principal ways in which the pregnant woman's drinking affects her developing child. They are growth retardation, abnormal physical devèlopment, central nervous system dysfunction, and fetal and perinatal death. When the first three appear concurrently and in severe form they are diagnostic of fetal alcohol syndrome. The damage is permanent and the child will not catch up in growth or intelligence. Fetal alcohol effects that do not fall into the above four categories include: poor condition at birth, sucking problems and complications of pregnancy. The frequency with which partial fetal alcohol effects occur has not been clearly established but are more common than the full fetal alcohol syndrome (Little 1983).

Mary Jane Fink, Executive Director of the Hunterdon Council on Alcoholism in Flemington, New Jersey, defined FAS as a cluster of anomalies that can occur in the offspring of mothers who are excessive alcohol users. In discussing FAE, she says, "Human and animal research has indicated that milder anomalies, for instance a reduced birth rate, can occur with even mild to moderate alcohol intake during pregnancy."

No minimum level of alcohol intake during pregnancy has been determined to be safe for the human fetus, according to the Hunterdon Council on Alcoholism. Mary Jane Fink states, "Since major organ formation occurs in the first eight to ten weeks of pregnancy and these

major organ systems can be involved in FAS and FAE, I can only reinforce the recommendations of the Hunterdon Council on Alcoholism as to minimum intake. I further recommend that all women abstain from alcohol consumption once pregnancy is diagnosed and when planning a pregnancy to avoid the harmful effects during the critical first weeks."

"The use and abuse of alcohol during pregnancy is a public health problem. It is estimated that alcoholism may occur in one to two percent of women of childbearing age. The abnormalities of FAS and FAE do not improve over time but rather are permanent. There are 135,000 women in New Jersey with alcohol problems and most of them are in their child-bearing years (Interview September 1985)."

The incidence of alcoholism in females appears to be increasing. It is presently estimated that the incidence among the adult female population of alcohol problems is between 3 and 9%(Heine 1981). The National Institute on Alcohol Abuse and Alcoholism (NIAAA) reported in 1950, one in every eight alcoholics to be a woman and in 1982, one in every three alcoholics were women. The highest proportion of heavy drinkers among females is between the ages of 21-29, the peak reproductive years. The second highest is in the teenage years (Ouellette 1983).

Research indicates that information is still incomplete concerning the full scope and gravity of the ill effects on the fetus and infants of chronic maternal alcohol abuse prior to and during pregnancy (Ouellette 1983). One or two children in every one thousand are born with FAS (Little 1983).

It is unknown how many children's lives have been permanently afflicted by excessive alcohol use in the mothers. The majority of children show only some of the abnormalities described. No laboratory tests are diagnostic of this disorder nor is there any present capability of identifying abnormal fetuses by amniocentesis (Ouellette 1983).

Five or six strong cocktails consumed in a single session early in pregnancy might be enough to instigate the mental retardation and many of the facial defects associated with fetal alcohol syndrome. There may be a two to three day critical period as early as a few weeks after conception when the developing human fetus is especially vulnerable. Those who are aware of their pregnancy at this stage may not realize that social or binge drinking so early in pregnancy may be as deleterious to the embryo as constant heavy drinking (Science News Dec 1981).

One ounce of alcohol daily showed significantly decreased birth weights. Even one ounce twice weekly resulted in a sizeable and significant increase in spontaneous abortions, when compared with non-drinking women, according to the department of Health and Human Services. FAS appears to be triggered predominantly by chronic alcoholism in women. Early efforts by public health officials to curtail drinking in pregnant women focused on mothers of potential FAS victims. The shift in recent years to include light drinkers has been gradual (Science News July 1981).

An occasional drink during pregnancy has only a slight effect on an infant's birth weight. With increasing maternal intake of alcohol the percentage of newborns weighing less increases sharply. In women who drank on the average of less than one drink a day, the reduction of birth weight was $\frac{1}{2}$ ounce; three ounces for women who drank one to two drinks daily and over $5\frac{1}{2}$ ounces in those who averaged three to five drinks daily (Professional Journal of the American Nurse's Association Feb. 1985).

How a baby is affected may hinge on a number of factors:
1-The mother's drinking pattern.
2-The stage of fetal development at which consumption is greatest.
3-Susceptibility of the fetus.
Not all fetuses are equally sensitive to trauma. Some experts think that the earliest days of gestation, even before a woman knows she is pregnant, are probably the most hazardous. Others are more concerned about the third trimester when the brain, the most sensitive to damage, has its major growth (Lake 1982).

It appears that drinking during pregnancy can severely damage fetal muscles, which prevent the infant from breathing properly. The muscle cells are abnormally small in these babies and the proteins in the muscles are frayed and entangled rather than uniform and parallel. Weakness associated with FAS was always attributed to damage in the central nervous system but the research shows that the primary cause is in the muscles themselves (Science News April 1981). There is evidence from animal studies that heavy prenatal exposure to alcohol can produce long term tolerance to alcohol (Abel et al.,1981).

There remains controversy in the research literature as to safe levels of alcohol consumption during pregnancy. The July, 1981 issue of the Food and Drug Administration's, "Drug Bulletin", advocated for the first time, total abstinence (Gold 1984). This caution has been criticized by some scientists. They believe the call for

abstinence will be taken seriously by those who need it the least, the light drinker. They feel the call for absolute abstinence may cause unnecessary anguish and guilt in women who had an occasional drink before their pregnancies were confirmed. Such women may even consider abortion or hold themselves responsible for birth defects that have no relation to alcohol ingestion (Roll et al., 1982).

Alcohol is the most widely used drug in North America and the most abused drug in the United States . Researchers have classified the American population into five groups of drinkers:

Abstainers-drink less than once a year.
Infrequent-drink less than once a month.
Light-drink at least once a month in small quantities.
Moderate-drink several times a month usually no more than three or four drinks per occasion.
Heavy-drink almost every day, frequently consuming five or more drinks per occasion. (Gold 1984)

Beer, wine and liquor are equally harmful. The following all contain approximately the same amount of ethanol:

A twelve ounce can of beer
A five ounce glass of table wine
A mixed drink with 1.5 ounces of 80 proof alcohol
(Streissguth 1978)

Beer and wine which are advertised as "non-alcoholic" or "de-alcoholized" can contain up to .5% alcohol. These two labels are not considered safe for at-risk groups (alcoholics, pregnant women and teenagers). Products labeled "no alcohol content" or "alcohol free" have no alcohol and are considered safe except that the psychological side effects can be detrimental, according to Mary Jane Fink of the Hunterdon Council on Alcoholism.

The levels of risk and impairment may vary according to the stage at which the fetus was exposed. It appears the same amount of alcohol may produce a variety of outcomes and differing amounts may produce similar outcomes. It is important to remember that all children are not uniformly impaired (Streissguth 1978).

Several studies (Little 1977 and Hansen et al., 1978) have reported that drinking two drinks per day either before pregnancy or prior to recognition of pregnancy, is linked to a variety of neonatal problems (this is an average of two drinks regardless of whether the drinking is daily or irregular). One ounce of alcohol daily before pregnancy is associated with an average of 3.2 oz. decrease in birth weight.

Intrauterine growth retardation and lowered birth rate have been reported when there was drinking during pregnancy (Hansen et al., 1978). Two drinks daily in late pregnancy is associated with 5.6 oz. of decrease in birth rate (Little 1977).

Recent studies of human spontaneous abortions have implicated maternal intake of alcohol during early pregnancy. Alcohol-containing solutions drunk by female mice about the time of conception produce chromosonal abnormalities of a type that leads to abortions. A study done at the University of Cambridge in England found about fifteen percent of 180 fertilized eggs either lacked one or two chromosomes or contained an extra chromosome. The abnormality seems to arise from incorrect segregation of chromosomes while completing the second meitotic division, (the chromosome separation that occurs shortly after the egg is stimulated by fertilization). The alcohol appears to act on the cell spindle, the apparatus that distributes chromosomes during cell division (Miller 1983).

Autopsies of the brains of infants born to heavy or binge drinkers revealed seriously abnormal patterns of cell migration. Mental, motor and behavioral effects have been reported in human neonates of low level alcohol intake mothers. Susceptibility of the brain to alcohol is not surprising, since even a single drink significantly suppresses fetal breathing (Little 1983).

No safe period of drinking during pregnancy has been established. The first trimester, while the organs are forming, is a critical time. In the second trimester an increased risk of spontaneous abortion may exist if the mother drinks regularly (Little 1983). A recent study in California of 32,000 pregnancies suggested that among women taking one or two drinks daily the risk of abortion in the second trimester was double that of non-drinking females (Edwards 1983). Growth and brain development are affected by alcohol consumption in the third trimester. Heavy drinking prior to pregnancy and during

lactation have been linked to adverse consequences for the child (Little 1983.

There is no known way to reverse or reduce the effects of alcohol on the fetus once they have occured. Postnatal growth retardation seen in these children is due to their active rejection of food. Sucking and swallowing movements coupled with extrusion movements of the tongue are uncoordinated, so the intake of food is less adequate and feeding time prolonged. Feeding problems are significant for the first year and gradually improve so that by the time the children are three to four years of age, they are consuming a more adequate diet, although highly selective in their food preferences (Ouellette 1983).

Three University of North Carolina researchers recently completed a study that pinpoints when alcohol first begins to affect the developing fetus. By injecting impregnated mice with ethanol, a substance found in every alcoholic beverage from beer to bourbon, seven days after fertilization, the fetal mice had the same abnormal facial features found in human FAS babies. The size and shape of the brain have very important spatial relationships within the developing face. The brain is just beginning to form and the ethanol affects its development, making it small and narrow. This in turn forces the olfactory placodes (the region around which the nose will form) close together. The mouse embryo's seventh day corresponds exactly to the third week in humans, well before most women suspect pregnancy (Science Digest 1982).

Alcohol passes rapidly from the maternal circulation to the fetus and assumes approximately the same concentration as in the maternal blood. Alcohol levels within the fetal circulation fall more slowly than in the maternal circulation. Thus, detectable levels of alcohol are still present in the fetus after the alcohol has been totally cleared from the maternal circulation. Not only does alcohol enter the fetal circulation but it is excreted into the amniotic fluid where it remains in essentially the same concentration for several hours until slowly being cleared. Changes are seen in fetal acid-base balance, cerebal function and metabolism (Ouellette 1983).

Observations of the effects of alcohol upon physiology and metabolism, particularly as related to the central nervous system,

support the view that maternal alcohol consumption during pregnancy may impair neurological and morphological fetal development. Brain lesions may occur in children who do not show the full scale features of FAS. Fetal exposure in utero may be the primary source for mental impairment. Mental deficiency in children with FAS has usually been found to occur in conjunction with a number of behaviors associated with central nervous system impairment. The behaviors range from aberrant and delayed fine motor control to poor attention spans, hyperdistractibility, and to hyperactivity. Many of the children are hyperactive during their preschool years. Those with less severe hyperactivity are distractible and have short attention spans. Many have learning disabilities and moderately affected children having normal IQ's have difficulty in both classroom management and in learning. School problems stemming from both hyperactivity and learning difficulties are frequent and many are recommended for special services by the third grade (Gold 1984).

There are a number of long-term effects of alcohol on the reproductive system of the male. Alcohol may have an immediate effect on the male with diminished sexual performance. As liver function declines there is a decreased clearance of estogens. With diminished testosterone values and elevated estogen levels, the male will often have testicular atrophy, libido decrease and fertility decrease (Heine 1981).

Both men and women report sexual arousal when under the influence of alcohol and both experience sexual dysfunction when inebriated (Abel 1980). A majority of drugs exert action on the central nervous system and block ovulation. Alcohol blocks the estrus cycle in animals but rarely is a woman anovulatory. Therefore females, except in the terminal stages of alcoholism, do have potential to conceive. It appears in animal studies, that during the acute ingestion of alcohol, sperm migration may be arrested and there may be a direct toxic effect on sperm in the fallopian tubes (Heine 1981).

Alcohol adversely affects both male and female reproductive physiology. Alcohol not only reduces male hormone production, it also affects spermatogenesis, resulting in the possibility of a male alcoholic siring a defective child (Abel 1980). Spermatogenesis is the formation and development of spermatozoa, which unite with the ovum to fertilize

it.

According to Mankes et al., (1982), "The vulnerability of the male reproductive system to various drugs and chemicals is emerging from the shadows of neglect, and potential reproductive hazards are no longer considered as solely a 'women's problem'". This research reported decreased litter size in mice and reduced rate of progeny. Mating of alcoholic rats to normal females revealed a pattern of malformations analogous to the fetal alcohol syndrome. Offspring were noted to have neural and renal malformations.

Testicular atrophy accompanied by histologic changes in various species of animals given ethanol were reported. Confirmed histologic changes in the testes and lowered testosterone levels have been cited (Mankes et al., 1982).

A newspaper article (Miller 1981) recognized that most of the medical literature on FAS focuses on the mother as the malefactor. The writer quotes Dr. Eleanor Reiff-Ross, a clinical psychologist, "When the father is an alcoholic, the syndrome symptoms are not as obvious at birth because the weight and length of the fetus tend to be within normal limits. It is only subsequently a number of years later, that it becomes apparent that there are emotional and psychological deficits in the child. There is data from a number of sources that epilepsy, mental retardation and psychotic behavior are possible manifestations when only the father is the alcoholic."

The research cites a case study (Cervantes 1984) on tissue damage due to paternal alcohol abuse. The father consumed a pint of hard liquor daily for years, the wife about a glass of wine daily. Two of their four children were developmentally delayed while the other two struggled to keep up in school. One had been diagnosed as hyperactive. Medical tests revealed the father to have liver, pancreas and other organ damage. He can be viewed as having a genetic liability.

Some adults are more vulnerable than others to tissue damage as a result to exposure to alcohol. The vulnerability may be genetic and passed on to the children. The fact that tissue damage occurs is extremely important in understanding the effects of alcohol consumption. Many birth defects in severe cases of FAS seem to be related to faulty cell development. The vulnerability of cells to damage from alcohol may extend to the sperm which men are continually producing. Fathers

may be transmitting the vulnerability to FAS directly to their children. They may be responsible for alcohol-related tissue damage in children (Cervantes 1984).

The parents of children, who demonstrate partial or full FAS or FAE characteristics and who are mentally retarded because of alcohol ingestion, are frequently not told of their children's diagnosis by well-meaning doctors. These professionals want to spare the parents the guilt that comes with such knowledge (Cervantes 1984). This may be true in the case of Joanne, a Hunterdon County, New Jersey resident (Personal interview September 1985).

Joanne and her husband have two children, ages six and four. Both parents were social drinkers. Preceding their first son's conception and during the pregnancy there was little maternal drinking. This baby had a difficult birth and was delivered with the umbilical cord around his neck. As a toddler, he walked on his toes and at this stage suffered a severe head injury in a falling accident. He has been diagnosed neurologically impaired with auditory perceptual difficulties, has a speech impediment and is functioning one year above grade level.

The mother, Joanne, began drinking moderately progressing to daily intake of wine at dinner. Her husband quit drinking due to the necessity of medication for high blood pressure. After a night of heavy maternal drinking, unknowingly, a second son was conceived. Three weeks later, Joanne remembers ingesting from nine to eleven drinks on a single occasion.

A few weeks later, her pregnancy was confirmed. Thinking that that much to drink may be harmful, she became very concerned. She discussed the high alcohol intake level with her obstetrician but was not warned of any consequences. She pooled the opinions of family and friends on the possibility of having one drink a day which she took with their and her own approval. She continued wine with dinner and a drink when friends visited.

At birth the second baby was jaundiced and smaller than the first baby. By one month, he was a poor sleeper, a failure to thrive baby, cried all the time, was hyperactive and did not nurse well. In Joanne's words, he was "so wired, you could not hold him."

The parents enlisted the aid of a Child Development program which assisted in feeding methods. Both sons were placed in therapy: physical, occupational and speech when age appropiate.

Prior to locating assistance through the Child Development program, Joanne continued to discuss her childrens' problems with her doctor, a general practitioner. He assured her both babies would be all right and sent her to a geneticist for a chromosomal check. There she was advised that alcohol did not cause her second son's problems.

While her regular physician was away, a substitute doctor examined son number two and discovered a heart problem. The son was hospitalized and diagnosed for restriction of the pulmonary artery or "blue baby".

From the time the second baby was a month old, Joanne questioned her alcohol intake as a causal factor in her baby's problems. Friends said, "Don't worry, I drank while pregant and nothing happened." She became unable to cope with the situation and her guilt. The drinking progressed to morning, afternoon and evening intake.

She has joined Alcoholics Anonymous and began volunteering at a Drug Awareness Center. She attended a seminar, "Drugs, Alcohol and the Pregnant Woman" presented by a doctor who described FAS and FAE. It was then the doubts and questions were answered for her.

Joanne's son is not as yet classified. He is of normal height, has a wandering eye, tubes in the ears due to severe fluid, microcephalic, has eye muscles switched in the eyes, is underweight, does not have FAS criteria facial features, the nose is flat but beginning to come out, toe and finger nails have a slight roundness, is hyperactive, has delayed and unclear speech, is personable, has high tolerance to pain and bruises easily. The mother says you would not know anything was wrong with him until he begins to speak. He does not initiate his own creative play and is age three mentally. His heart which had two holes between the two chambers has been corrected surgically, three months ago.

This mother had never heard of Fetal Alcohol Syndrome. Her original doctor has not as yet confirmed FAS, saying he does not know for sure due to the newness of the problem.

Joanne feels angry and anxious that information was not made available to her and has periods of deep sorrow and crying. She is tired of being patronized and knows early intervention is necessary in FAS prevention. While she does not worry about what professionals will think about her, she avoids the subject if strangers are present. She does wonder what her son will think about her when he grows up.

She cares about what others think when they learn about him. She questions how she will talk to her son about the subject and worries about how he will advance and if he will ever be independent.

Joanne will be speaking on FAS at a future convention. She wonders what the audience will think of her but is willing to risk judgment and exposing her anonymity, if, in her words, "I can spark something in another to save them from the same tragedy, it will be worthwhile." She cautions that the "one drink" belief present in today's literature is false. "Alcohol", she warns, "Goes from your mouth to the baby."

The following book has been recommended by her as a source of practical sound advice on the effects of alcohol on the fetus and urges all potential parents to read it:

"Alcohol and the Fetus"

by Henry L. Rosett and Lyn Weiner

Oxford University Press 1984 New York, New York

Copies are not plentiful and may be ordered at $24.95 per copy through Oxford University Press, Attention: Medical Marketing Manager, 200 Madison Avenue, New York, New York 10016. Telephone 212-679-7300.

A New York City health regulation requires all bars, restaurants and liquor stores to post notices that read, "Warning: Drinking Alcoholic Beverages During Pregnancy Can Cause Birth Defects." State Legislators in New York and Maine are considering similar state laws. A proposal introduced in Congress for warning labels on alcoholic beverages has been unsuccessful. Many U.S. doctors agree that evidence against alcohol merit strict warnings. Other doctors disagree, disputing the degree of alcohol consumption necessary to cause FAS and feel the burden of guilt would threaten the woman's and child's health (Time 1984). It has been estimated that infants born with alcohol-related birth defects in New York in one year, 1978, will cost the State's economy at least $155 million in lifetime care (Blume 1981).

In Sweden politicians have seriously considered enforcing laboratory screening of all pregnant women to detect those at risk for FAS. Doctors there feel there is a probability that an elevated level of serum-y-glutamyl transferase is associated with alcohol abuse. There is urgent need to integrate a systematic history of drinking into pre-

natal care as a first step in the prevention of fetal damage (Larsson et al., 1983).

The Committee on Alcoholism of the Medical Society of New York designed a self-test, which does not diagnose but can alert the physician, to be administered in the physician's or clinic waiting room. A copy is on the next page (Blume 1981).

One research (Gold 1984) suggests that children thought to be at risk due to maternal or paternal drinking should be closely monitored throughout their school years. Children who experience behavioral and learning problems or hyperactivity should be evaluated for possible prenatal exposure to alcohol so that they may be better serviced.

If the current trends in social drinking continue, the problem is likely to become more frequent in the future. Early education is vital and information about the possible risks of alcohol damage to fetuses should be included in every health education cirriculum in the schools (Holland 1981).

In conclusion, continued research on parental alcohol intake is urgent. Alcohol is an avoidable hazard for the fetus. Increased awareness by the medical community and improved education of the lay public is vital. Radio, newspapers and television are ideal for public service announcements. Brochures placed in physician's offices, family planning agencies, prenatal clinics, libraries, schools, churches, alcohol treatment agencies and women's groups would provide valuable services and information to the public.

The re-identification of the risk of maternal alcohol use during pregnancy, the possible risk of paternal drinking and the recognition of the effects of alcohol on fetal development is just a few years young. Much more needs to be learned.

Essentially, history tells us reproduction and alcohol do not mix. There is no known way to reverse or reduce the effects of alcohol on the fetus once they have occured. By the time most women learn of their pregnancy, it may be too late to save their babies from alcohol-induced developmental damage.

The safe level of alcohol use during pregnancy has not been established, although reports from research indicate that there is an increased risk of birth anomalies with the regular use of relatively

1. When you are depressed or nervous, do you find any of the following helpful to feel better or to relax?

	Very Helpful	Not Helpful	Never Tried
a. Smoking cigarettes	____	____	____
b. Working harder than usual at home or job	____	____	____
c. Taking a tranquilizer	____	____	____
d. Taking some other kind of pill or medication	____	____	____
e. Having a drink	____	____	____
f. Talking it over with friends or relatives	____	____	____

	Yes	No
2. Think of the times you have been most depressed; at those times did you:		
a. Lose or gain weight	___	___
b. Lose interest in things that usually interest you	___	___
c. Have spells when you couldn't seem to stop crying	___	___
d. Suffer from insomnia	___	___
3. Have you ever gone to a doctor, psychologist, social worker, counselor or clergyman for help with an emotional problem?	___	___

4. How many cigarettes a day do you smoke? Check one.

____More than 2 packs ____1-2 packs ____Less than 1 pack ____None

5. How often do you have a drink of wine, beer, or a beverage containing alcohol?

____3 or more times a day ____Once or twice a week

____Twice a day ____Once or twice a month

____Almost every day ____Less than once a month

____Never

6. a. If you drink wine, beer or beverages containing alcohol, how often do you have four or more drinks?

____Almost always ____Frequently ____Sometimes ____Never

b. If you drink wine, beer or beverages containing alcohol, how often do you have one or two?

____Almost always ____Frequently ____Sometimes ____Never

	Yes	No
7. Does your drinking sometimes lead to problems between you and your family, that is, wife, husband, children, parent or close relative?	___	___
8. During the past year, have close relatives or friends worried or complained about your drinking?	___	___
9. Has a friend or family member ever told you about things you said or did while you were drinking that you do not remember?	___	___
10. Have you, within the past year, started to drink alcohol and found it difficult to stop before becoming intoxicated?	___	___
11. Has your father or mother ever had problems with alcohol?	___	___

FIGURE 1. Health questionnaire. Answers to be checked.

BEST COPY AVAILABLE

The self-test may be photocopied for use as part of your routine evaluation for men as well as women. It is designed to be filled out by the patient in the waiting room. Alternatively the questionnaire may be administered by a staff member. Its purpose is to alert the physician to possible alcohol problems, and to the extent of self reported smoking and alcohol use. It may alert to the presence of emotional problems.

Use of the Questionnaire

Q. 1. An answer of "very helpful" on "c, d or e" should alert the physician to possible alcohol or drug dependence.

Q. 2 & 3. Any "yes" should alert the physician to possible emotional problems.

Q. 7-11. Any "yes" should alert the physician to possible alcohol problems.

Q. 4-6. Give an indication of cigarette and alcohol use. Although patients with alcohol problems may under-report their drinking--the recorded data may be of considerable help.

If the physician suspects or is sure that the patient has a drinking problem:

1. To establish a firm diagnosis, consult the NCA criteria for the diagnosis of alcoholism (enclosed in this kit).

2. When consultation or referral is appropriate, consult or refer to:

   a) a physician experienced in the treatment of alcoholism
   b) an alcoholism treatment facility
   c) your local council on alcoholism
   d) Alcoholics Anonymous: A.A. is listed in every telephone directory.

3. Refer family members and other concerned and interested persons close to the patient to:

   a) a physician experienced in the treatment of alcoholism
   b) an alcoholism treatment facility
   c) your local council on alcoholism
   d) Al Anon family groups including Alateen for young family members; These groups may be contacted through telephone listings for Al Anon or for Alcoholics Anonymous.

FIGURE 2. Instructions for use of alcohol and health self-test.

small amounts of alcohol. Detectable levels of alcohol remain in the fetus after being metabolized by the mother.

The incidence of FAS and FAE is increasing. This may be due to the re-examination of old concepts regarding maternal and paternal alcohol ingestion. Children thought to be at-risk due to drinking on the part of their parents should have special programs, based on updated research, to accomodate their special needs.

There is evidence to warrant telling men not to drink in the months before they intend to father children. The effects of alcohol on the sperm is in need of laboratory research.

FAS is not the sort of thing pediatricians and family doctors commonly diagnose or discuss with the family. It is a sensitive subject. FAS is caused by specific activities on the part of the parents, unlike Down Syndrome.

Children are prohibited by law from drinking alcohol; yet no legal protection is afforded to the fetus.

Unlike genetic disorders, Fetal Alcohol Syndrome is totally preventable.

SOURCES FOR INFORMATION AND SERVICES

ALCOHOLICS ANONYMOUS
Local Telephone Directories, World-wide, in the Front Section Listing Community Services with Alcoholism, as the First Heading. Yellow Pages Listings, under "Alcoholsim Information and Treatment Centers.

BEVERAGE ALCOHOL INFORMATION COUNCIL
425 13th Street, N.W., Suite 1300
Washington, D.C. 20004
Contact: Paul Gavagham

CENTER OF ALCOHOL STUDIES LIBRARY
Rutgers University, P.O. Box 969
Piscataway, New Jersey 08854
Telephone: 201-932-4442

FAMILY CENTER
Thomas Jefferson University Hospital
111 South 11th Street, Suite 6105
Philadelphia, Pennsylvania 19107
Contact: Dianne Regan, M.S.W.; Clinical Coordinator
Telephone 215-928-8577 (M-F, 9-4 p.m.)

An out-patient voluntary program under auspices of the hospital. Referrals are accepted from a variety of sources including drug programs or walk-ins. Pregnant women with any type of drug problem are urged to contact the facility as early in their pregnancy as possible. Medical services provided include Psychosocial Counseling, Treatment for infants who exhibit withdrawal, Follow up examinations include neurological and medical evaluations.

FETAL ALCOHOL SYNDROME PREVENTION PROJECT
Washington-Greene Prevention Corporation
87 East Maiden Street, Second Floor
Washington, Pennsylvania 15301
Contact: Katherine B. Yancosek
Telephone: 412-228-0810

FETAL ALCOHOL SYNDROME PROJECT
New York State Division of Alcoholism and Alcohol Abuse
194 Washington Avenue
Albany, New York 12210
Contact: Shirley Burris, R.N.
Telephone 518-473-7563

GENERAL SERVICE OFFICE
Alcoholics Anonymous
P.O. Box 459
Grand Central Station
New York, New York 10163

HUNTERDON COUNCIL ON ALCOHOLISM, NCA
3 East Main Street
Flemington, New Jersey 08822
Contact: Mary Jane Fink, Executive Director
Telephone 201-782-3903

Services include: Intoxicated Drivers Resource Center, Alternative Sentencing Program, Student Assistance Program, Employee Assistance Program, Project S.O.B.E.R., Community Education for school, Social Service Agencies, Legal/Community groups and Clubs and a Resource Room open to the public and supplies audio-visual materials.

OFFICE ON WOMEN
National Council on Alcoholism
733 Third Avenue
New York, New York 10017

RESOURCE GUIDE
Fetal Effects Program
NIAAA's National Clearing House for Alcohol Information
P.O. Box 2345
Rockville, Maryland 20852
Submit requests to: Reference Services

TERATOLOGY SERVICE PROGRAM
Division of Medical Genetics
Department of Pediatrics
UMDNJ Rutgers Medical School
Academic Health Sciences Center
CN 19
New Brunswick, New Jersey 08903
Telephone 201-937-7891

Phamphlet available; Program set up to expand prenatal care by identifying pregnancies at-risk for birth defects due to environmental agents. Information is provided as to potential effects of chemicals, infectious diseases, maternal metabolic diseases, radiation and other exogenous agents. Counseling is encouraged for women who anticipate exposure. Persons are referred by their primary care physician.
Fees: Evaluation for exposure to teratogens is provided on a sliding fee scale basis no no one is refused service because of inability to pay.

WOMEN FOR SOBRIETY
P.O. Box 618
Quakertown, Pennsylvania 18951

BIBLIOGRAPHY

Abel, ErnestL.; Bush, Renee; and Dintcheff, Barbara. (1981) Prenatal Alcohol and Drug Tolerance. Science News, 120, 25.

Abel, Ernest L. (1980) A Review of Alcoholic Effects on Sex and Reproduction. Drug and Alcohol Dependence, 5, 321-331.

Alcohol and Fetal Muscle. (1981) Science News, 119, 262.

Alcohol Hurts Fetuses. (1982) Science Digest, 90, 90.

Batshaw, Mark L. and Perret, Yvonne. (1981) Children with Handicaps: A Medical Primer. Baltimore: Paul Brookes Publishing Company.

Blume, Sheila (1981) Drinking and Pregnancy. New York State Journal of Medicine, 81, 95-98.

Cervantes, Linda LeValley. (1984) Not for Women Only. Alcoholism, 5, 30-31.

Edwards, Griffith. (1983) Alcohol and Advice to the Pregnant Woman. British Medical Journal, 286, 247-248.

FAS Tied to Occasional Binge Drinking. (1981) Science News, 120, 363.

Gold, Sandra and Sherry, Lee. (1984) Hyperactivity, Learning Disabilities and Alcohol. Journal of Learning Disabilities, 17, 3-6.

Hansen, J.W.; Streissguth, A.P.; and Smith, D.W. (1978) The Effects of Moderate Alcohol Consumption During Pregnancy on Fetal Growth and Morphogensis. Journal of Pediatrics, 92, 457-460.

Heine, M. Wayne. (1981) Alcoholism and Reproduction. Progress in Biochemical Pharmacology, 18, 75-82.

Holland, M.W. (1981) Alcohol and the Unborn Child: The Fetal Alcohol Syndrome. International Journal of Environmental Studies, 17, 67-71.

How Much Drinking is Safe During Pregnancy? (1985) Professional Journal of the American Nurses Association, 85, 175.

Lake, Alice. (1982) What Research Shows About Drinking and Pregnancy. Redbook, 159, 79.

Larsson, G.; Ottenblad, C.; Hagenfeld, L.; Larsson, A.; and Forsgren, M. (1983) Evaluation of Serum-Y-Glutamyl Transferase as a Screening Method for Excessive Alcohol Consumption During Pregnancy. Stockholm, Sweden: Department of Psychiatry and Gynaecology and Obstetrics, 147, 654-657.

Lemeshaw, Seymour. (1982) The Handbook of Clinical Types in Mental Retardation. Boston: Allyn and Bacon, Inc.

Little, Ruth. (1983) Fetal Alcohol Effects: An Overview. Journal of the American Medical Womens Association, 38, 46-47.

Little, R.E. (1977) Moderate Alcohol Use During Pregnancy and descreased Infant Birth Weight. American Journal of Public Health, 67, 1154-1156.

Mankes, R.F.; LeFevre, R.; Benitz, K.F.; Rosenblum, I.; Bates, H.; Walker, A.I.T. (1982) Effects of Ethanol on Male Rats. Journal of Toxicology and Environmental Health, 10, 871-878.

Miller, J.A. (1983) Alcohol Damage at Time of Conception. Science News, 123, 214.

Miller, Sue (1981) Dad's Drinking Can Harm Fetus. The Sunday Star-Ledger, Section 8, 6.

No Social Drinking For Pregnant Women. (1981) Science News, 120, 53.

Ouellette, Eileen M. (1983) A Report on Fetal Alcohol Syndrome. Manuscript Presented to the House Select Committee on Children, Youth and Families.

Roll, David B.; Smith, Terrence; and Whelan, Elizabeth M.; (1982) Alcohol Use During Pregnancy: What Advice Should Be Given to the Pregnant Woman? Advances in Alcohol and Substance Abuse, 2, 61-67.

Sad News for the Happy Hour. (1984) Time, 123, 67.

Stephens, Cheryl J. (1981) The Fetal Alcohol Syndrome: Cause for Concern. The American Journal of Maternal Child Nursing, 6, 34.

Streissguth, A. P. (1978) Fetal Alcohol Syndrome: An Epidemiological Perspective. American Journal of Epidemiol, 107, 467-478.